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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,710	01/14/2002	Lothar Diehl	10191/2143	9804
26646	7590	06/10/2004	EXAMINER	
KENYON & KENYON ONE BROADWAY NEW YORK, NY 10004			OLSEN, KAJ K	
			ART UNIT	PAPER NUMBER
			1753	
DATE MAILED: 06/10/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/045,710	DIEHL, LOTHAR	
	Examiner	Art Unit	
	Kaj K Olsen	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11 and 13-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-11 and 13 is/are allowed.
- 6) ☒ Claim(s) 14-24 and 27 is/are rejected.
- 7) ☒ Claim(s) 25 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Oath/Declaration

1. The applicant's resubmitted Oath is approved and the examiner will withdraw the previous objection.

Priority

2. The filed certified copy of the foreign priority document is acknowledged and the examiner will withdraw the previous objection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 14-24 and 27 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matsubara et al (USP 6,348,140 B1).
5. With respect to the claims 14, 16, 17, and 27, Matsubara discloses a sensor element comprising lead wires (23c, 23d) and a measuring device comprising electrodes 23a and 23b thereby defining a measurement area (fig. 1, 2A, and 2B). The lead wires are metallic (col. 5, lines 32-42) so they have an inherently positive temperature coefficient and they sandwich a solid electrolyte element 13 which would have an inherently negative temperature coefficient. The resistances associated with these positive and negative temperature coefficients as well as

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electrodes 23a and 23b, which with the electrolyte 13 under the measurement area would constitute the defined third electrical resistance, would constitute a total resistance. With respect to the limitations drawn to the offsetting of these various resistances, it would appear that combination of positive and negative temperature coefficients that Matsubara would undergo during a temperature change would inherently result in an offsetting of these two resistances. Although the degree of resistance offsetting might not be the same as that of the disclosed present invention, the degree of offsetting has not been claimed in such a manner that reads free of the teaching of Matsubara. With respect to the coordinating of the resistances, the determination of patentability for the claim is based on the product itself. Because the product of the claim is identical to the invention of Matsubara the process from which it was made is the same as or obvious over the process utilized by Matsubara (see *In re Thorpe*, 777 F.2d 695, 698).

6. Alternatively, the purpose of the electrode lead configuration of Matsubara is so that the resistance of the leads remains low and doesn't vary much (col. 2, lines 48-67 and col. 5, lines 43-67). If the resistance of the leads is kept low, these leads would be less susceptible to temperature changes so that any variation in the temperature distribution in the lead wires would be sufficiently small that it would read on the term "approximately constant" giving the claim language its broadest reasonable interpretation.

7. With respect to claims 15, 21 and 22, that is only the intended use of the apparatus and the intended use need not be given further due consideration in determining patentability.

8. With respect to the housing of claim 18, elements 15 and 30 in combination (or any unspecified structure holding the sensor in the exhaust gas line) would constitute the specified housing giving the claim language its broadest reasonable interpretation.

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9. With respect to claim 19, portions of the leads near the electrodes (and consequently near a portion subject to the greatest heating) are narrower than portions of the leads near the outlet end of the sensor (compare the upper portions of 23c and 23d with the lower portions of 23c and 23d in fig. 2A and 2B). Because resistance of a metal material varies as the cross section of the material, those upper portions would have higher resistances.

10. With respect to claim 20, see col. 9, lines 1-15.

11. With respect to claims 23 and 24 (those limitations not covered above), see col. 2, lines 33-38; col. 5, lines 1-10; and col. 11, lines 24-34.

Allowable Subject Matter

12. Claims 1, 2, 4-11 and 13 are allowed.

13. Claims 25 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The reasons for the allowable subject matter can be found in the previous office action.

Response to Arguments

15. Applicant's arguments filed 3-24-2004 have been fully considered but they are not persuasive. The examiner has withdrawn the previous 112 second paragraph rejections. The examiner also will withdraw the rejection concerning the scope of "approximately constant". However, the examiner will continue to give such a term its broadest reasonable interpretation. In the present case, the applicant hasn't specified in the claims either an explicit range that reads

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on “approximately constant”, or has the applicant specified how much change in the temperature distribution must occur over the lead area (1 °C? 100 °C?) for the temperature to remain “approximately constant”, it is unclear how the teaching of Matsubara would read free of this claim language.

16. Applicant urges in their response urges that the specification discloses what would read on “approximately constant”. In particular, this passage discloses how the total resistance changed from 10 ohm to 15 ohm over some unspecified temperature change. Assuming “cold” means room temperature and assuming the units on the temperature are “Celsius”, then the temperature change would appear to be approximately 775 degrees. However, the examiner cannot read these conditions from the specification onto the applicant’s claims. If the examiner were to do so, that would unfairly limit the scope of the applicant’s invention. For the sake of demonstration, lets assume that Matsubara does not teach these conditions (i.e. a 5 ohm change over 775 degrees of temperature change). However, if Matsubara can maintain the total resistance within 5 ohms over, as an example, a 100 degrees or 10 degrees or even just 1 degree, would not Matsubara meet the claimed conditions? It would appear to the examiner that if Matsubara can maintain an approximately constant resistance over *any* temperature change, regardless of how small that change is, Matsubara meets the claim limitations.

17. Applicant urges that the new limitation of claim 14 about the effect of rising temperatures reads free of Matsubara. The examiner disagrees. As temperature goes up, the positive temperature coefficient of the electrical leads dictates that the first resistance will go up. Similarly, as temperature goes up, the electrolyte resistance (which has a negative temperature coefficient) will go down (see fig. 8 of Matsubara). Hence these two phenomena will offset each

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other. The degree that these two phenomena in Matsubara will offset each other might not be as great as that of the present invention. However, the claims merely require an unspecified degree of offset. Matsubara inherently would have an unspecified level of offset.

18. Applicant urges that Matsubara is constructed such that the electrical leads have *no* influence on the total resistance. Applicant's paraphrasing of Matsubara appears to be incorrect. What Matsubara teaches is that the resistance of the leads is set to a "sufficiently low level" such that the measurement error "can be reduced sufficiently" (col. 5, lines 60-63). This is not the same thing as saying that the resistance will have *no* influence, rather that influence is being minimized. In fact, this minimization would appear to be a resistance that is between 25 to 40% of the combined resistance (see abstract). In addition, even though Matsubara chooses to construct the leads such that there is minimal contribution to the total resistance, that does not alter the fact that the metal utilized for that lead will increase in resistance upon an increase in temperature. That is fundamental physics.

19. Applicant's argument concerning the specification objection were persuasive and the examiner has withdrawn that objection.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Thursday from 6:30 A.M. to 4:00 P.M. and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Kaj Olsen', with a long horizontal flourish extending to the right.

Kaj Olsen Ph.D.

Primary Examiner

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June 8, 2004